

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Yoichiro Ohta	)
		)
Serial No.:	10/796,344	)
		)
Conf. No.:	1978	)
		)
Filed:	3/9/2004	)
		)
For:	VACUUM PROCESSING	)
	APPARATUS	)
		)
Art Unit:	1792	)
		)
Examiner:	Lund, Jeffrie Robert	)

**APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. §41.37**

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Date: July 12, 2010

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**APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. §41.37**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is in support of Applicant's Notice of Appeal dated June 7, 2010, from the final rejection dated March 5, 2010.

## **APPEAL BRIEF**

### **(i) REAL PARTY IN INTEREST**

The real party in interest in this case is Sharp Kabushiki Kaisha, 22-22, Nagaik-cho, Abeno-ku, Osaka-shi, Osaka, Japan 545-8522. An Assignment of the Application to the real party of interest has been recorded on Reel 016345, Frame 0210, on July 14, 2005.

(ii) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences that will directly affect, be directly affected by, or have a bearing on, the Board's decision in this pending appeal.

### (iii) STATUS OF CLAIMS

This Application was originally filed with seven (7) claims, numbered as Claims 1-7. During various points in the prosecution, new Claims 8-38 were added, and Claims 1-21 and 24 were cancelled, without prejudice. Additionally, Claims 30-28 were withdrawn as being directed to a non-elected invention. Pending Claim 22 is an independent claim, and pending dependent Claims 23 and 25-29 all refer back to independent Claim 22. Prior to this appeal, Claims 22, 23 and 25-29 were rejected, and no claims have been allowed. The rejection of Claims 22, 23 and 25-29 is herein appealed.

In summary, the status of the claims is as follows:

- 1-21. (Cancelled)
- 22-23. (Rejected and being Appealed)
- 24. (Cancelled)
- 25-29. (Rejected and being Appealed)
- 30-38. (Withdrawn)

(iv) STATUS OF AMENDMENTS

Amendment G, filed on November 23, 2009, in response to the June 22, 2009 Office Action, has been entered and acted upon, as indicated by the Examiner in the March 5, 2010 Final Office Action.



(v) SUMMARY OF CLAIMED SUBJECT MATTER

The claims under appeal (Claims 22, 23 and 25-29) are reproduced below, with bracketed insertions referring to the associated portions of the written description and/or drawings of the above-named application:

Claim 22. A vacuum processing apparatus [page 3, lines 8-11; page 4, lines 18-25; FIG. 1, apparatus 10] comprising:

a floor panel [page 8, line 3; FIG. 1, panel 50];

a fixing block [page 8, line 24; FIG. 2, fixing block 64] connected to the floor panel [page 8, line 3; FIG. 1, panel 50];

a vacuum chamber [page 4, line 26; FIG. 1, chamber 16] provided on the floor panel [page 8, line 3; FIG. 1, panel 50];

a pair of vacuum pumps [page 7, line 36; FIG. 2, vacuum pumps 18] provided on the floor panel [page 8, line 3; FIG. 1, panel 50], said vacuum pumps being fixed to the floor panel near bottom portions thereof [page 8, lines 1-3; FIG. 1 shows pump 18 fixed to floor panel 50];

a pipe [page 5, lines 12-14; FIGs. 1 and 2, pipe 30] connecting the vacuum chamber [FIG. 1, vacuum chamber 16] to each of the vacuum pumps [FIG. 2, vacuum pumps 18] for evacuating the vacuum chamber [FIG. 2, vacuum chamber 16];

a flexible pipe [page 5, line 16, FIGs. 1-7, flexible pipe 36] included in a part of the pipe [FIGs. 1 and 2, pipe 30];

an inlet pipe [page 5, line 14; FIGs. 1 and 3, inlet pipe 32] included in a part of the pipe [FIGs. 1 and 3, pipe 30] for connecting the flexible pipe [FIGs. 1 and 3, flexible pipe 36] to each of the corresponding vacuum pumps [FIGs. 1-3, vacuum pumps 18]; and

a mechanism [page 8, line 25 through page 8, line 34; FIGs. 1-3, mechanism 46] that includes a bar [FIGs. 1-3, bar 60] fixed to each of a rising portion of the inlet pipes [FIGs. 1 and 3, inlet pipes 32] and a chain block [FIGs. 2 and 3, chain block 62] fixed to a central part of the bar and the fixing block [Fig. 2], said mechanism [Fig. 2, mechanism 46] being connected via a first connection to the fixing block, at one end thereof, [FIG. 2, fixing block 64] and being connected via a second connection to top parts of each of the vacuum pumps, at an opposite end thereof [FIGs. 1-3, vacuum pumps 18], wherein said mechanism [46] is configured and arranged to maintain a distance between the inlet pipe [32] and the fixing block [64] in an extending direction of the flexible pipe [36] so as not to shrink the flexible pipe [36], in the extending direction, at a time of evacuation [page 7, lines 23-26; page 8, lines 12-16; and page 10, lines 27-32], wherein:

each of the vacuum pumps are provided in parallel with each other with a gap therebetween [FIG. 2, vacuum pumps 18], and

the mechanism [FIG. 2, mechanism 46] is provided between the vacuum pumps [FIG. 2, vacuum pumps 18].

Claim 23. The vacuum processing apparatus [FIG. 1, apparatus 10] according to claim 22, wherein:

the inlet pipe [FIG. 1, inlet pipe 32] is provided on the top part of each of the corresponding vacuum pumps [FIG. 1, vacuum pump 18].

Claim 25. The vacuum processing apparatus [FIG. 1, apparatus 10] according to claim 22, wherein:

the chain block [FIG. 2, chain block 62] is provided between the vacuum pumps [FIG. 2, vacuum pumps 18].

Claim 26. The vacuum processing apparatus [FIG. 1, apparatus 10] according to claim 25, wherein:

the inlet pipe [FIG. 1, inlet pipe 32] is provided on a vacuum chamber-side of a top part of each of the corresponding vacuum pump [FIG. 1, in this view, the left side of vacuum pump 18 is the vacuum-chamber side because it is closer to vacuum chamber 16], and

the fixing block [FIG. 2, fixing block 64] is provided between the vacuum pumps [FIG. 2, vacuum pumps 18] and on an opposite side [*i.e.*, the right side] with respect to the vacuum chamber [FIG. 2, vacuum chamber 16].

Claim 27. The vacuum processing apparatus [FIG. 1, apparatus 10] according to claim 22, wherein each of said vacuum pumps [FIGs. 1-3, vacuum pumps 18] is seated upon a plurality of cushion members [page 8, lines 2-5; FIG. 3, cushion members 49],

which are positioned between said vacuum pump [FIG. 3, vacuum pump 18] and an associated base member [FIG. 3, base member 48], and further wherein said base members [FIG. 3, base member 48] are attached to the floor panel [FIG. 3, floor panel 50].

Claim 28. The vacuum processing apparatus [FIG. 1, apparatus 10] according to claim 22, wherein said bar is a quadrangular bar [page 8, lines 29-30; FIGs. 1-3, bar 60] .

Claim 29. The vacuum processing apparatus [FIG. 1, apparatus 10] according to claim 22, wherein said chain block operates in a direction to expand the flexible pipe [page 8, lines 25-26; FIG. 2, chain block 62, flexible pipe 36].

(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Whether Claims 22, 23 and 25-29 are unpatentable under 35 U.S.C. § 103 over “Applicants Admitted Prior Art (AAPA)” in view of JP 61-008479 to Sekiguchi et al. and United States Patent No. 2,663,894 to Elliott.<sup>1</sup>

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1. The Examiner also mentions JP 57-116947 in the summary sentence of this rejection (March 5, 2010 Final Office Action, paragraph number 3, first sentence), but this appears to be in error because the details of how JP 57-116947 is applied in this rejection are not provided. Applicant believes that JP 57-116947 was inadvertently carried over into paragraph 3 from a previous version of another rejection. Accordingly, Applicant is responding as though JP 57-116947 does not apply to the rejection of paragraph 3. If Applicant's assumption is incorrect, Applicant respectfully requests the issuance of a new non-final office action which clearly details how JP 57-116947 applies to the rejection of paragraph 3.

(vii) ARGUMENT

**I. THE REJECTION OF CLAIMS 22, 23 and 25-29 UNDER 35 U.S.C. §103 AS BEING UNPATENTABLE OVER “APPLICANT’S ADMITTED PRIOR ART” IN VIEW OF JP 61-008479 TO SEKIGUCHI ET AL. AND UNITED STATES PATENT NO. 2,663,894 TO ELLIOTTE SHOULD BE REVERSED<sup>2</sup>**

Applicant appeals the Examiner’s rejection of Claims 22, 23 and 25-29. As discussed in detail below, the §103 rejection of Claims 22, 23 and 25-29 is improper because:

(A) Applicant’s Figure 8, and its associated description, should not be considered as “prior art” that is available for a rejection because this subject matter represents the present Applicant’s own work that was provided as a Comparative Example; (B) Even assuming *arguendo* that the subject matter of Applicant’s Figure 8, and its associated description, can be relied upon in a rejection, the cited references fail to disclose all of the claimed features.

A. Applicant’s Figure 8, Which The Examiner Relied Upon As Admitted Prior Art, Is Actually A Comparative Example Of The Present Invention That Was Provided To Demonstrate The Behavior Of A Device Lacking Key Features Of The Present Invention, And Is Thus Not Actually “Prior Art” Available For A §103 Rejection

i. Independent Claim 22 and associated Dependent Claims 23 and 25-29

Applicant respectfully submits that it is improper for the Examiner to rely on Applicant’s Figure 8, and its associated description, as “Prior Art” in this §103 rejection

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2. The Examiner also mentions JP 57-116947 in the summary sentence of this rejection (March 5, 2010 Final Office Action, paragraph number 3, first sentence), but this appears to be in error because the details of how JP 57-116947 is applied in this rejection are not provided. Applicant believes that JP 57-116947 was inadvertently carried over into paragraph 3 from a previous version of another rejection. Accordingly, Applicant is responding as though JP 57-116947 does not apply to the rejection of paragraph 3. If Applicant’s assumption is incorrect, Applicant respectfully requests the issuance of a new non-final office action which clearly details how JP 57-116947 applies to the rejection of paragraph 3.

because Applicant's Figure 8 is actually a Comparative Example, which was provided to compare the present invention to an apparatus that lacks key features of the present invention (such as the key feature of a mechanism (including a bar and a chain block) that is configured and arranged to maintain a distance between the inlet pipe and the fixing block in an extending direction of the flexible pipe so as not to shrink the flexible pipe, in the extending direction, at a time of evacuation). Applicant added the "Prior Art" designation to Figure 8 in Amendment C (filed April 10, 2007), in response to the Examiner's requirement from page 2 of the January 12, 2007 Office Action. However, Figure 8 is not actually described in the present Specification as being "Prior Art." More specifically, this figure is not described in the "Description of the Related Art" section of the Specification as originally filed, where other "prior art" subject matter is described. Instead, Figure 8 is described in the "DESCRIPTION OF THE PREFERRED EMBODIMENTS" section of the Specification as originally filed, which is where the various embodiments of the present invention are described. Additionally, when describing Figure 8 in the "BRIEF DESCRIPTION OF THE DRAWINGS" section of the present Specification, there is no mention that Figure 8 is prior art, only that it is "a view explaining the shrinkage of the flexible pipe at the time of evacuation." See Specification, page 4, lines 15-16. Finally, in the full description of Figure 8 on page 6 (line 12) through page 7 (line 22) of the Specification as originally filed, there is no indication that Figure 8, and its associated description, are describing the prior art. Instead, Figure 8 and its associated description are describing a problem that the inventor of

the present application discovered (which problem was then solved by inventor of the present invention).

Applicant respectfully submits that the situation of the present application is covered by the commentary of MPEP §2129, which states: “even if labeled as “prior art,” the work of the same inventive entity may not be considered prior art against the claims unless it falls under one of the statutory categories”(emphasis in original omitted). MPEP §2129 also states: “Consequently, the examiner must determine whether the subject matter identified as “prior art” is applicant’s own work, or the work of another.” Applicant respectfully submits that Figure 8, and its associated discussion, is Applicant’s own work. Accordingly, such subject matter may not be considered as prior art against the current claims because it does not fall under one of the statutory categories.

In order to avoid any confusion on this issue, Applicant proposes amending the legend of Figure 8 to a more accurate description, such a “Comparative Example,” if the Examiner (and/or the Board) agrees to such a drawing change.

Accordingly, as it has been shown that Figure 8, and its associated description, should not be considered as prior art because it represents Applicant’s own work, and thus does not fall under one of the statutory categories of prior art, Applicant respectfully requests that the §103 rejection of independent Claim 22 and associated dependent Claims 23 and 25-29 be withdrawn for at least this reason.



B. Even Assuming *Arguendo* That Applicant's Figure 8 And Its Associated Description Can Be Relied Upon In A §103 Rejection, The Cited References Fail to Disclose Or Suggest All Of The Claimed Features

i. Independent Claim 22 and associated Dependent Claims 23 and 25-29

1. One Of Ordinary Skill The Art Would Not Have Modified "AAPA" In The Manner Suggested By The Examiner, But Instead Would Have Modified "AAPA" In A Different Manner, Resulting In The Lack Of Vacuum Pumps That Are "Fixed To The Floor Panel Near Bottom Portions Thereof," As Defined In Independent Claim 22.

i. Independent Claim 22 and associated Dependent Claims 23 and 25-29

Applicant respectfully submits that the cited references, alone or in combination, fail to disclose or suggest all of the features of the present invention defined in independent Claim 22. More specifically, Applicant respectfully submits that the cited references fail to disclose or suggest an apparatus that includes, *inter alia*, the claimed pair of vacuum pumps that are "fixed to the floor panel near bottom portions thereof," as defined in independent Claim 22.

As correctly acknowledged by the Examiner, the AAPA<sup>3</sup> fails to disclose or suggest, *inter alia*, the following features of independent Claim 22: a fixing block, a mechanism for maintaining a distance between the inlet pipe and the fixing block in an

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3. For the sake of convenience, Applicant's Figure 8 and its associated description, will be referred to as "AAPA" (which is the designation originated by the Examiner), even though Applicant disagrees that such subject matter qualifies as prior art that can be relied upon in a rejection. See Section I.A. above. In other words, in this argument Applicant is only considering *arguendo* that Applicant's Figure 8, and its associated description, can be considered as "Prior Art" that can be relied upon for a §103 rejection.

extending direction of the flexible pipe so as to not shrink the flexible pipe at a time of evacuation, and a chain block provided as part of the mechanism. *See* March 5, 2010 Final Office Action, page 3, lines 14-21.

Accordingly, the Examiner relied upon the Sekiguchi et al. reference and the Elliott reference for these features. *See* March 5, 2010 Final Office Action, page 3 (line 22) through page 4 (line 9).

Initially, Applicants respectfully submit that one of ordinary skill in the art would not have modified “AAPA” in light of the Sekiguchi et al. reference and the Elliott reference in the manner suggested by the Examiner. In particular, assuming *arguendo* that a combination of the relevant references would have been obvious, Applicant respectfully submits that the resulting combination would be different from that suggested by the Examiner.

More specifically, the Sekiguchi et al. reference teaches suspending a vacuum pump 28 from above within a set of slidable frames 32, 33, so that the pump 28 is capable of pendulum-type movement in all directions. *See* Sekiguchi et al., Figure 3; English Abstract, Constitution Section, lines 10-12 (“the exhaust pipe 27 [which is fixed to pump 28] moves freely with a center point [A] of the bellows as a fulcrum”). Such pendulum-type movement absorbs the vibrations of the pump. Therefore, since such pendulum-type movement is so important to the device of Sekiguchi et al., Applicant respectfully submits that any teaching related to vibration absorbing derived from the Sekiguchi et al. reference requires the pump

to be suspended from above to enable such pendulum-type movement in all directions, which configuration also appears to rely on gravity to dampen such pendulum-type movements.

Accordingly, Applicant respectfully submits that, assuming *arguendo* that one of ordinary skill in the art would have modified “AAPA” in light of the Sekiguchi et al. reference, they would have necessarily included means for providing such pendulum-type motion, thereby allowing the bottom portion of the pump to move in all directions in a pendulum-like fashion. This is the case because the pendulum-type motion appears to be the principle of operation of the Sekiguchi et al. reference, and it is improper for a proposed modification to change the principle of operation of a reference. *See, e.g.,* MPEP §2143.01(VI).

However, the inclusion of a means for providing such pendulum-type motion from the Sekiguchi et al. reference into the “AAPA” would result in a device with a feature that is directly opposite to the feature of Claim 22 that calls for the vacuum pumps to be “fixed to the floor panel near bottom portions thereof.” More specifically, in order for a device to meet the principle of operation of the Sekiguchi et al. reference, the vacuum pump must be free to move with pendulum-type motion, which is directly opposite to a feature of the device defined in Claim 22 in which the vacuum pumps are “fixed to the floor panel near bottom portions thereof.” For ease of understanding, one example of an embodiment of Applicant’s invention that includes such a feature is shown in Applicant’s Figures 2 and 3, which include a pair of vacuum pumps 18 (Figure 2) that are fixed to the floor panel 50 (Figure 3) near bottom portions thereof, such as by fittings 52.

Further, the Elliott reference does not appear to remedy this deficiency because it is unclear how to use the vibro-isolating structure of the Sekiguchi et al. reference without hanging the pump to permit it to move in a pendulum-type fashion.

Accordingly, for at least this reason, Applicant respectfully requests the withdrawal of the §103 rejection of independent Claim 22 and associated dependent Claims 25-29.

2. Even Assuming *Arguendo* That One Of Ordinary Skill In The Art Would Have Modified “AAPA” In The Manner Suggested By The Examiner, The Resulting Combination Would Still Lack The Claimed “Mechanism . . . Configured And Arranged To Maintain A Distance Between The Inlet Pipe And The Fixing Block . . . So As Not To Shrink The Flexible Pipe . . . At A Time Of Evacuation,” As Defined In Independent Claim 22.

i. Independent Claim 22 and associated Dependent Claims 23 and 25-29

Even assuming *arguendo* that the Elliott reference and the Sekiguchi et al. reference could be somehow incorporated into “AAPA” in the manner suggested by the Examiner, the Examiner’s proposed combination would still lack features defined in independent Claim 22. For example, the proposed combination would also lack, *inter alia*, “a mechanism, connected via a first connection to the fixing block, at one end thereof, and connected via a second connection to top parts of each of the vacuum pumps, at an opposite end thereof, wherein said mechanism is configured and arranged to maintain a distance between the inlet pipe and the fixing block in an extending direction of the flexible pipe so as not to shrink the flexible pipe, in the extending direction, at a time of evacuation,” as defined in independent Claim 22.

In the Final Office Action, the Examiner appears to equate both chain 35 of the Sekiguchi et al. reference and chain 103 of Elliotte with an element of the claimed “mechanism” defined in Claim 22, such as the claimed chain block. *See* March 5, 2010 Final Office Action, page 3 (line 22) through page 4 (line 9). However, as described in more detail below, neither chain 35 of the Sekiguchi et al. reference nor chain 103 of Elliotte can be considered as satisfying the claimed “chain block” of the “mechanism” of Claim 22 because neither of these components “is configured and arranged to maintain a distance between the inlet pipe and the fixing block . . . so as not to shrink the flexible pipe . . . at a time of evacuation,” as defined in independent Claim 22.

First, with regard to the Sekiguchi et al. reference, as can be seen in Figure 1 of this reference, this reference discloses a vacuum chamber 11, a bellows 26, an exhaust pipe 27, a vacuum pump 28, a first frame 32, a second frame 33, and a chain 35. The bellows 26 connects the vacuum chamber 11 with the vacuum pump 28. The first frame 32 and the second frame 33 are provided inside of the bellows 26. The first frame 32 is fixed to a bottom section 21 of the vacuum chamber 11. The second frame 33 is fixed to the exhaust pipe 27 of the vacuum pump 28, so as to be slidable with respect to the first frame 32. The chain 35 is provided between the first frame 32 and the second frame 33.

According to the Sekiguchi et al. reference, during vacuum processing, even when the second frame 33 shifts towards the vacuum chamber 11, the second frame 33 cannot shift further than the length of the chain 35, which is provided between the first frame 32 and the second frame 33. This configuration makes it possible to prevent the bellows

from shrinking too much. Thus, during vacuum processing, the chain 35 provided between frames 32 and 33 is strained. Accordingly, vibration of the vacuum pump 28 is easily transmitted to the vacuum chamber 11 via the chain 35 in such a strained state. Therefore, such a configuration cannot achieve the vibration preventing effect realized by the mechanism defined in independent Claim 22.

With regard to the Elliotte reference, the Examiner points out that this reference teaches, while referring to Figures 1 and 2 of Elliotte, preventing the movement of a flexible hose 59 with a bar 43 (which the Examiner equated with the claimed quadrangular bar), which supports load elements 41 with a chain 103 that is attached to the bar 43. *See* March 5, 2010 Final Office Action, page 4 (lines 4-9). However, Applicant respectfully submits that in Elliotte, in column 4 (lines 56-67), this reference discloses that such a configuration is used in hoisting a travelling street cleaner into a non-operative condition for: (i) supporting a suction inlet of the street cleaner; and (ii) lifting the front wheels above the ground, which wheels hold a motor unit 17 that is used for suction. Accordingly, this configuration is not intended to prevent the movement (i.e., the shrinking) of the flexible hose 59, which was the Examiner's asserted motivation for relying on Elliotte. *See* March 5, 2010 Office Action, page 4, lines 10-13 ("the motivation for adding the quadrangular bar 43 supporting load elements 41 with a chain 103 attached to fixing blocks (one block 104 attaches the chain 103 to the bar 43 and a second block (not shown) attaches the second end to a support 102).").

Instead of a configuration for preventing shrinking of the flexible hose 59, the flexible hose 59 of Elliottte is provided to flexibly connect the discharge duct 61 with a discharge elbow assembly 59, which is attached to the motor unit 17. Therefore, during the hoisting process, the flexible hose 59 absorbs any inequalities in the distance between the elbow assembly 56 and the discharge duct 61, thereby facilitating the hoisting process. Accordingly, the chain 103 is not intended to prevent the movement (shrinking) of the flexible hose 59.

In fact, the chain 103 of Elliottte actually appears to operate in the exact opposite manner of the mechanism of Claim 22, in that chain 103 *allows shrinking* of the flexible pipe 59. As mentioned above, chain 103 of Elliottte is designed to lift horizontal platform frame 16 off the ground when the vacuum unit is to be placed in a non-operative condition, so that nozzle portion 28 is away from the street. See Elliottte, column 4, lines 56-67. Thus, chain 103 pivots the horizontal platform frame 16 towards piping section 61, thereby shrinking flexible pipe section 59. Such a configuration is exactly the opposite of the mechanism of Claim 22, which is defined as being “configured and arranged to maintain a distance [between two components] in an extending direction of the flexible pipe so as not to shrink the flexible pipe, in the extending direction, at a time of evacuation.” (emphasis added). Since chain 103 of Elliottte encourages shrinking of the flexible pipe, it cannot be considered as part of the claimed “mechanism” that is configured so as not to shrink the flexible pipe.

Further, the other chains of Elliott, chains 106, cannot be considered as part of the claimed “mechanism” either. Chains 106 are not designed to maintain a distance between two components so as not to shrink the flexible pipe, as defined in Claim 22. Instead, chains 106 are designed not to stretch the flexible pipe 59. More specifically, in the paragraph bridging columns 4 and 5 of the Elliott reference, chains 106 are described as being used to prevent the cleaner frame from dropping too low. Thus, without chains 106, the cleaner frame may pivot downwardly if wheels 65 sink into a hole in the pavement, which movement would stretch flexible pipe 59, unless chains 106 are provided to prevent such downward pivoting. Accordingly, as chains 106 of Elliott operate in the opposite manner as the mechanism defined in independent Claim 22, Applicant respectfully submits that chains 106 do not satisfy the claimed “mechanism” either.

Thus, for at least the reasons discussed above, Applicant respectfully requests the withdrawal of this §103 rejection of independent Claim 22 and associated dependent Claims 23 and 25-29.

3. Even Assuming *Arguendo* That One Of Ordinary Skill In The Art Would Have Modified “AAPA” In The Manner Suggested By The Examiner, The Resulting Combination Would Still Lack The Claimed “Chain Block [That] Operates In A Direction To Expand The Flexible Pipe,” As Defined In Dependent Claim 29.

i. Dependent Claim 29

As mentioned in Section I. B. 2 above, the Examiner appeared to equate both chain 35 of the Sekiguchi et al. reference and chain 103 of Elliott with an element of the



claimed “chain block.” However, as explained below, Applicant respectfully submits that neither of these chains operate in a direction to expand the flexible pipe, as defined in dependent Claim 29, but instead both of these chains operate in a direction to allow at least some shrinkage of a flexible pipe, which is essentially the opposite of the feature defined in dependent Claim 29.

As mentioned above, in the example of an embodiment of the present invention shown in Applicant’s Figures 1-3, chain block 62 operates in the direction (represented by the arrows in Figures 2 and 3] to expand the flexible pipe 36, as defined in dependent Claim 29 (“Said chain block operates in a direction to expand the flexible pipe”). In contrast, as can be seen from a review of Figure 1 of the Sekiguchi et al. reference, chain 35 operates in the direction to prevent excess shrinkage of flexible pipe 26. More specifically, in Sekiguchi et al., during the time of evacuation of chamber 11, the second frame 33 is sucked toward the chamber 11. However, the second frame 33 is attached to the chain 35, which is attached to first frame 32, which is fixed to the wall of the vacuum chamber 11. Accordingly, the chain 35 prevents excess upward movement of the second frame 33. Since the lower end of the second frame 3 is rigidly attached to the lower end of the flexible pipe 26, the chain 35 also prevents excess upward movement of the flexible pipe 26 (*i.e.*, chain 35 operates in a direction to prevent excess shrinkage of flexible pipe 26). Such a configuration is essentially the opposite of the configuration defined in dependent Claim 29 (in which the chain block “operates in a direction to expand the flexible pipe”).

As also explained above, with regard to the Elliott reference, chain 103 of the Elliott reference also operates in a direction to allow shrinkage of the flexible pipe 59, and thus is also a configuration that is the opposite of that defined in dependent Claim 29 (in which the chain block “operates in a direction to expand the flexible pipe” (emphasis added)). More specifically, as mentioned above, chain 103 of Elliott lifts the horizontal platform frame 16 off the ground when the vacuum unit is to be placed in a non-operative condition, so that nozzle portion 28 is away from the street. *See Elliott*, column 4, lines 56-67. Thus, chain 103 pivots the horizontal platform frame 16 towards piping section 61, thereby operating in a direction to shrink the flexible pipe section 59. Such a configuration is exactly the opposite that of dependent Claim 29, which states that “said chain block operates in a direction to expand the flexible pipe.”

Accordingly, for at least these reasons, the §103 rejection of dependent Claim 29 should be withdrawn.

4. The Examiner Has Improperly Over-Broadened The Teachings Of Sekiguchi et al. and Elliott

i. Independent Claim 22 and Associated Dependent Claims 23 and 25-29

In the “Response to Arguments” Section on Pages 4 and 5 of the March 5, 2010 Final Office Action, the Examiner asserted that “Both Sekiguchi et al. and Elliott teach the

use of a beam and a chain to prevent movement or to control movement.” See March 5, 2010 Final Office Action, page 5 (lines 7-9). Applicant respectfully submits that this assertion is an overly broad interpretation of the teaching of the references at issue. As discussed in Sections I.B.2. and I.B.3. above, the chains of both the Sekiguchi et al. reference and the Elliott reference are not used to maintain the separation between two components on either side of a flexible pipe “so as not to shrink the flexible pipe” (emphasis added), as defined in independent Claim 22. Instead, the chain 35 of the Sekiguchi et al. reference operates to prevent excess shrinkage of the flexible pipe 26 during evacuation of the vacuum chamber 11, and the chain 103 of the Elliott reference allows shrinking of the flexible pipe 59 when the chain 103 is used to lift the platform frame 16 off the ground and into an inoperative position. Thus, at best, Applicant respectfully submits that the teachings of Sekiguchi et al. and Elliott both relate to the use of a chain in an assembly that allows at least some shrinking of a flexible pipe. However, this is the opposite of the mechanism of independent Claim 22 whose purposes are to “maintain a distance” between two components and “not to shrink the flexible pipe.” Accordingly, Applicant respectfully submit that when the teachings of the Sekiguchi et al. reference and the Elliott reference are properly narrowed to how they would be interpreted by one of ordinary skill in the art, the invention defined in independent Claim 22 would not result from a combination of “AAPA,” the Sekiguchi et al. reference and the Elliott reference.

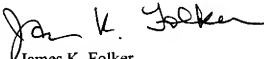
Accordingly, for at least this reason, the §103 rejection of dependent Claim 29 should be withdrawn.

## II. CONCLUSION

For all of the above reasons, Applicant respectfully requests that the Board reverse the §103 rejection of Claims 22, 23 and 25-29 as being unpatentable over "Applicants Admitted Prior Art (AAPA)" in view of JP 61-008479 to Sekiguchi et al. and United States Patent No. 2,663,894 to Elliotte.

Respectfully submitted,

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**(viii) CLAIMS APPENDIX**

The following claims (Claims 22, 23 and 25-29) are involved in this appeal:

22. A vacuum processing apparatus comprising:

a floor panel;

a fixing block connected to the floor panel;

a vacuum chamber provided on the floor panel;

a pair of vacuum pumps provided on the floor panel, said vacuum pumps being fixed to the floor panel near bottom portions thereof;

a pipe connecting the vacuum chamber to each of the vacuum pumps for evacuating the vacuum chamber;

a flexible pipe included in a part of the pipe;

an inlet pipe included in a part of the pipe for connecting the flexible pipe to each of the corresponding vacuum pumps; and

a mechanism that includes a bar fixed to each of a rising portion of the inlet pipes and a chain block fixed to a central part of the bar and the fixing block, said mechanism being connected via a first connection to the fixing block, at one end thereof, and being connected via a second connection to top parts of each of the vacuum pumps, at an opposite end thereof, wherein said mechanism is configured and arranged to maintain a distance

between the inlet pipe and the fixing block in an extending direction of the flexible pipe so as not to shrink the flexible pipe, in the extending direction, at a time of evacuation, wherein:

each of the vacuum pumps are provided in parallel with each other with a gap therebetween, and

the mechanism is provided between the vacuum pumps.

23. The vacuum processing apparatus according to claim 22, wherein:

the inlet pipe is provided on the top part of each of the corresponding vacuum pumps.

25. The vacuum processing apparatus according to claim 22, wherein:

the chain block is provided between the vacuum pumps.

26. The vacuum processing apparatus according to claim 25, wherein:

the inlet pipe is provided on a vacuum chamber-side of a top part of each of the corresponding vacuum pump, and

the fixing block is provided between the vacuum pumps and on an opposite side with respect to the vacuum chamber.

27. The vacuum processing apparatus according to claim 22, wherein each of said vacuum pumps is seated upon a plurality of cushion members, which are positioned between said vacuum pump and an associated base member, and further wherein said base members are attached to the floor panel.

28. The vacuum processing apparatus according to claim 22, wherein said bar is a quadrangular bar.

29. The vacuum processing apparatus according to claim 22, wherein said chain block operates in a direction to expand the flexible pipe.

**(ix) EVIDENCE APPENDIX**

No evidence is submitted by Appellants pursuant to 37 C.F.R. §§1.130, 1.131 or 1.132, or entered by the Examiner and relied upon by Appellants in this appeal.



**(x) RELATED PROCEEDINGS APPENDIX**

There are no related decisions rendered by a court or the Board in any proceeding pursuant to 37 C.F.R. §41.37(c)(1)(ii).